Release notes for ENDF/B Development n-054_Xe_134 evaluation

April 26, 2017

- **checkr** Warnings:

    1. A previous error halted parsing of the current section
       MAT=5455, MF= 1, MT=451 (1): Parsing stopped

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 1, MT=451
        SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER     126 TO     194
    ```

- **checkr** Errors:

    1. A variable is outside the allowed ENDF range
       MAT=5455, MF= 1, MT=451 (0): Variable range

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 1, MT=451
        MOD =     1 OUT OF RANGE     0 -     0          RECORD NUMBER     126
    ```

    2. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5455, MF= 2, MT=151 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 2, MT=151
        SECTION  2/151 NOT IN DIRECTORY               RECORD NUMBER     196
    ```

    3. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5455, MF= 3, MT= 1 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 3, MT=  1
        SECTION  3/  1 NOT IN DIRECTORY               RECORD NUMBER     275
    ```

    4. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5455, MF= 3, MT= 2 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 3, MT=  2
        SECTION  3/  2 NOT IN DIRECTORY               RECORD NUMBER     307
    ```

    5. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5455, MF= 3, MT= 4 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 3, MT=  4
        SECTION  3/  4 NOT IN DIRECTORY               RECORD NUMBER     339
    ```

    6. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5455, MF= 3, MT= 16 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 16
        SECTION  3/ 16 NOT IN DIRECTORY               RECORD NUMBER     367
    ```

    7. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5455, MF= 3, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 17
            SECTION  3/ 17 NOT IN DIRECTORY                  RECORD NUMBER     382
```

8. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=5455, MF= 3, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 22
            SECTION  3/ 22 NOT IN DIRECTORY                  RECORD NUMBER     390
```

9. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=5455, MF= 3, MT= 28 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 28
            SECTION  3/ 28 NOT IN DIRECTORY                  RECORD NUMBER     401
```

10. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 51 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 51
            SECTION  3/ 51 NOT IN DIRECTORY                  RECORD NUMBER     412
```

11. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 52 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 52
            SECTION  3/ 52 NOT IN DIRECTORY                  RECORD NUMBER     440
```

12. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 53 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 53
            SECTION  3/ 53 NOT IN DIRECTORY                  RECORD NUMBER     466
```

13. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 54 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 54
            SECTION  3/ 54 NOT IN DIRECTORY                  RECORD NUMBER     491
```

14. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 55 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 55
            SECTION  3/ 55 NOT IN DIRECTORY                  RECORD NUMBER     516
```

15. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 56 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 56
         SECTION  3/ 56 NOT IN DIRECTORY                RECORD NUMBER    541
```

16. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 57 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 57
         SECTION  3/ 57 NOT IN DIRECTORY                RECORD NUMBER    565
```

17. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 58 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 58
         SECTION  3/ 58 NOT IN DIRECTORY                RECORD NUMBER    589
```

18. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 59 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 59
         SECTION  3/ 59 NOT IN DIRECTORY                RECORD NUMBER    613
```

19. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 60 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 60
         SECTION  3/ 60 NOT IN DIRECTORY                RECORD NUMBER    636
```

20. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 61 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 61
         SECTION  3/ 61 NOT IN DIRECTORY                RECORD NUMBER    659
```

21. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 62 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 62
         SECTION  3/ 62 NOT IN DIRECTORY                RECORD NUMBER    682
```

22. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 63 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 63
         SECTION  3/ 63 NOT IN DIRECTORY                RECORD NUMBER    704
```

23. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 64 (0): Directory (b)

3

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 64
   SECTION  3/ 64 NOT IN DIRECTORY                RECORD NUMBER     726
```

24. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 65 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 65
   SECTION  3/ 65 NOT IN DIRECTORY                RECORD NUMBER     748
```

25. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 66 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 66
   SECTION  3/ 66 NOT IN DIRECTORY                RECORD NUMBER     769
```

26. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 67 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 67
   SECTION  3/ 67 NOT IN DIRECTORY                RECORD NUMBER     790
```

27. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 68 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 68
   SECTION  3/ 68 NOT IN DIRECTORY                RECORD NUMBER     810
```

28. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 69 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 69
   SECTION  3/ 69 NOT IN DIRECTORY                RECORD NUMBER     830
```

29. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT= 91 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT= 91
   SECTION  3/ 91 NOT IN DIRECTORY                RECORD NUMBER     849
```

30. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT=102 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT=102
   SECTION  3/102 NOT IN DIRECTORY                RECORD NUMBER     868
```

31. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT=103 (0): Directory (b)

4

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT=103
    SECTION  3/103 NOT IN DIRECTORY                RECORD NUMBER     900
```

32. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT=104 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT=104
    SECTION  3/104 NOT IN DIRECTORY                RECORD NUMBER     917
```

33. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT=105 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT=105
    SECTION  3/105 NOT IN DIRECTORY                RECORD NUMBER     929
```

34. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 3, MT=107 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 3, MT=107
    SECTION  3/107 NOT IN DIRECTORY                RECORD NUMBER     939
```

35. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT=  2
    SECTION  4/  2 NOT IN DIRECTORY                RECORD NUMBER     957
```

36. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 16
    SECTION  4/ 16 NOT IN DIRECTORY                RECORD NUMBER    1309
```

37. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 17 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 17
    SECTION  4/ 17 NOT IN DIRECTORY                RECORD NUMBER    1348
```

38. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 22 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 22
    SECTION  4/ 22 NOT IN DIRECTORY                RECORD NUMBER    1365
```

39. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 28 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 28
           SECTION  4/ 28 NOT IN DIRECTORY                 RECORD NUMBER    1392
```

40. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 51 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 51
           SECTION  4/ 51 NOT IN DIRECTORY                 RECORD NUMBER    1419
```

41. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 52 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 52
           SECTION  4/ 52 NOT IN DIRECTORY                 RECORD NUMBER    1648
```

42. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 53 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 53
           SECTION  4/ 53 NOT IN DIRECTORY                 RECORD NUMBER    1865
```

43. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 54 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 54
           SECTION  4/ 54 NOT IN DIRECTORY                 RECORD NUMBER    2012
```

44. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 55 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 55
           SECTION  4/ 55 NOT IN DIRECTORY                 RECORD NUMBER    2219
```

45. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 56 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 56
           SECTION  4/ 56 NOT IN DIRECTORY                 RECORD NUMBER    2304
```

46. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 57 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 57
           SECTION  4/ 57 NOT IN DIRECTORY                 RECORD NUMBER    2387
```

47. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 4, MT= 58 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 58
    SECTION  4/ 58 NOT IN DIRECTORY                 RECORD NUMBER    2468
```

48. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 59$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 59
    SECTION  4/ 59 NOT IN DIRECTORY                 RECORD NUMBER    2547
```

49. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 60$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 60
    SECTION  4/ 60 NOT IN DIRECTORY                 RECORD NUMBER    2624
```

50. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 61$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 61
    SECTION  4/ 61 NOT IN DIRECTORY                 RECORD NUMBER    2699
```

51. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 62$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 62
    SECTION  4/ 62 NOT IN DIRECTORY                 RECORD NUMBER    2772
```

52. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 63$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 63
    SECTION  4/ 63 NOT IN DIRECTORY                 RECORD NUMBER    2843
```

53. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 64$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 64
    SECTION  4/ 64 NOT IN DIRECTORY                 RECORD NUMBER    2912
```

54. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 65$ (0): Directory (b)

```
ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 65
    SECTION  4/ 65 NOT IN DIRECTORY                 RECORD NUMBER    2979
```

55. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5455, MF= 4, MT= 66$ (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 66
          SECTION  4/ 66 NOT IN DIRECTORY                RECORD NUMBER    3044
```

56. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 4, MT= 67 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 67
          SECTION  4/ 67 NOT IN DIRECTORY                RECORD NUMBER    3107
```

57. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 4, MT= 68 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 68
          SECTION  4/ 68 NOT IN DIRECTORY                RECORD NUMBER    3166
```

58. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 4, MT= 69 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 69
          SECTION  4/ 69 NOT IN DIRECTORY                RECORD NUMBER    3223
```

59. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 4, MT= 91 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 4, MT= 91
          SECTION  4/ 91 NOT IN DIRECTORY                RECORD NUMBER    3276
```

60. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 5, MT= 16 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 5, MT= 16
          SECTION  5/ 16 NOT IN DIRECTORY                RECORD NUMBER    3330
```

61. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 5, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 5, MT= 17
          SECTION  5/ 17 NOT IN DIRECTORY                RECORD NUMBER    3500
```

62. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 5, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5455, MF= 5, MT= 22
          SECTION  5/ 22 NOT IN DIRECTORY                RECORD NUMBER    3560
```

63. Missing a section in directory so your directory is messed up. This error will break everything else
 MAT=5455, MF= 5, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 5, MT= 28
         SECTION  5/ 28 NOT IN DIRECTORY                RECORD NUMBER    3663
```

64. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF= 5, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF= 5, MT= 91
         SECTION  5/ 91 NOT IN DIRECTORY                RECORD NUMBER    3766
```

65. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF=33, MT= 2 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF=33, MT=  2
         SECTION 33/  2 NOT IN DIRECTORY                RECORD NUMBER    3994
```

66. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF=33, MT= 4 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF=33, MT=  4
         SECTION 33/  4 NOT IN DIRECTORY                RECORD NUMBER    4084
```

67. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF=33, MT= 16 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF=33, MT= 16
         SECTION 33/ 16 NOT IN DIRECTORY                RECORD NUMBER    4127
```

68. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5455, MF=33, MT=102 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5455, MF=33, MT=102
         SECTION 33/102 NOT IN DIRECTORY                RECORD NUMBER    4139
```

- psyche   Warnings:

  1. Strength function in URR not in agreement with PSYCHE's expectations
     FILE 2 / SECTION 151 / ISOTOPE MASS = 134. L = 0 / STRENGTH FUNCTION IS 1.58456E-07 / STRENGTH FUNCTION 1.58456E-07 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.

```
FILE  2
   SECTION 151
       ISOTOPE MASS = 134. L =  0
               STRENGTH FUNCTION IS  1.58456E-07
                          STRENGTH FUNCTION 1.58456E-07
... [1 more lines]
```

  2. Strength function in URR not in agreement with PSYCHE's expectations
     FILE 2 / SECTION 151 / ISOTOPE MASS = 134. L = 1 / STRENGTH FUNCTION IS 5.09829E-05 / STRENGTH FUNCTION 5.09829E-05 / LIES OUTSIDE LIMITS 1.00000E-04 TO 8.00000E-04 (0): URR str. ftn.

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```
FILE  2
   SECTION 151
      ISOTOPE MASS = 134. L =  1
                   STRENGTH FUNCTION IS  5.09829E-05
                               STRENGTH FUNCTION 5.09829E-05
... [1 more lines]
```

- **fudge-4.0** Warnings:

  1. Missing a channel with a particular angular momenta combination
     resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

     ```
     WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
     WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
     WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
     WARNING: Missing a channel with angular momenta combination L = 1, J = 2.5 and S = 1.5 for "capture"
     ```

  2. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (n + Xe134): / Form 'eval': / Component 0 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (n + Xe134): / Form 'eval': / Component 1 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 1 ((z,n)): / Form 'eval': (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 2 (n[multiplicity:'2'] + Xe133): / Form 'eval': (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 3 (Xe135 + gamma): / Form 'eval': / Component 0 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 3 (Xe135 + gamma): / Form 'eval': / Component 1 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

- **fudge-4.0** Errors:

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1. Calculated and tabulated Q values disagree.
   reaction label 21: n[multiplicity:'2'] + Xe133 (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -3932231.416732788 eV vs -8.5369e6 eV!
   ```

2. Calculated and tabulated Q values disagree.
   reaction label 22: n[multiplicity:'3'] + Xe132 (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -10366666.9597168 eV vs -1.4975e7 eV!
   ```

3. Calculated and tabulated Q values disagree.
   reaction label 23: n + H1 + I133 (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -4906884.684799194 eV vs -9.5253e6 eV!
   ```

4. Calculated and tabulated Q values disagree.
   reaction label 24: Xe135 + gamma (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: 10983837.23146057 eV vs 6.4523e6 eV!
   ```

5. Calculated and tabulated Q values disagree.
   reaction label 25: n + He4 + Te130 (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: 1421982.011032104 eV vs -3.2017e6 eV!
   ```

6. Calculated and tabulated Q values disagree.
   reaction label 26: H1 + I134_s (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: 1350323.86932373 eV vs -3.3525e6 eV!
   ```

7. Calculated and tabulated Q values disagree.
   reaction label 27: H2 + I133_s (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -2682318.583862305 eV vs -7.3008e6 eV!
   ```

8. Calculated and tabulated Q values disagree.
   reaction label 28: H3 + I132_s (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: -4683113.602462769 eV vs -9.2881e6 eV!
   ```

9. Calculated and tabulated Q values disagree.
   reaction label 29: He4 + Te131_s (Error # 0): Q mismatch

   ```
   WARNING: Calculated and tabulated Q-values disagree: 7351361.481735229 eV vs 2.728e6 eV!
   ```

- `njoy2012` Warnings:

   1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
      groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

      ```
      ---message from conver---cannot do complete particle production for mt= 16
                          only mf4/mf5 provided
      ```

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 17
                         only mf4/mf5 provided
```

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 22
                         only mf4/mf5 provided
```

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 28
                         only mf4/mf5 provided
```

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

```
 ---message from conver---cannot do complete particle production for mt= 91
                         only mf4/mf5 provided
```